

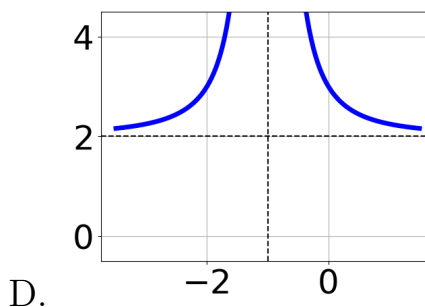
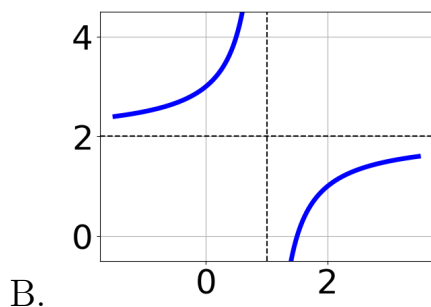
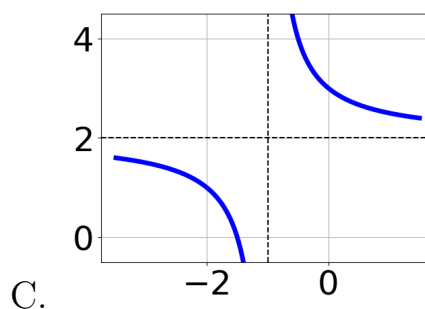
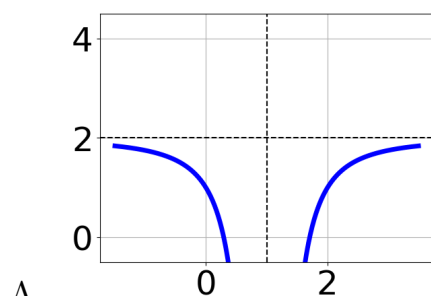
1. Determine the domain of the function below.

$$f(x) = \frac{5}{36x^2 - 66x + 30}$$

- A. All Real numbers except  $x = a$ , where  $a \in [29.87, 30.11]$
- B. All Real numbers.
- C. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [0.66, 0.99]$  and  $b \in [0.96, 1.04]$
- D. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [29.87, 30.11]$  and  $b \in [35.75, 36.14]$
- E. All Real numbers except  $x = a$ , where  $a \in [0.66, 0.99]$
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2. Choose the graph of the equation below.

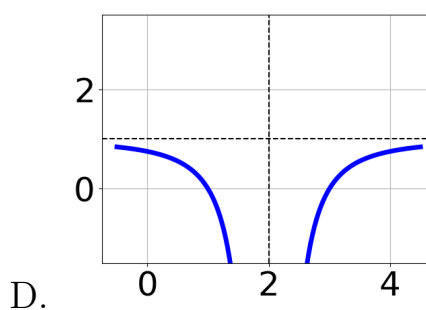
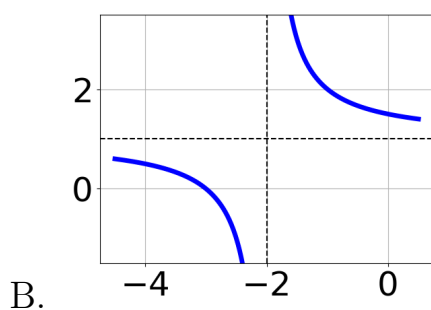
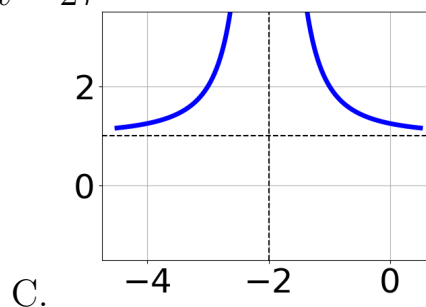
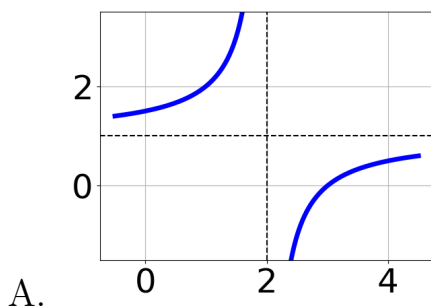
$$f(x) = \frac{-1}{x-1} + 2$$



- E. None of the above.
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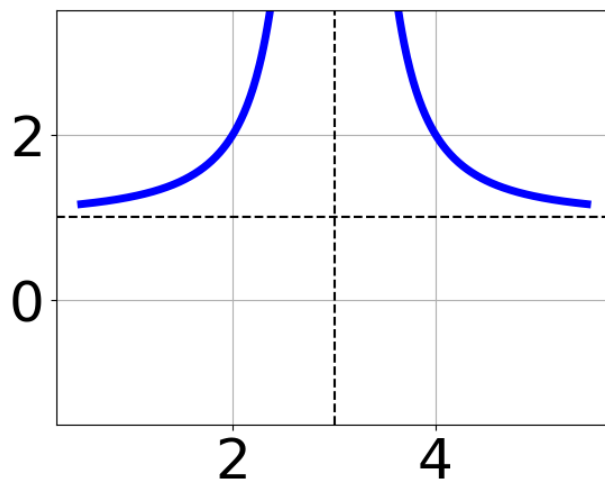
3. Choose the graph of the equation below.

$$f(x) = \frac{-1}{(x-2)^2} + 1$$



E. None of the above.

4. Choose the equation of the function graphed below.



A.  $f(x) = \frac{1}{(x+3)^2} + 7$

B.  $f(x) = \frac{-1}{x-3} + 7$

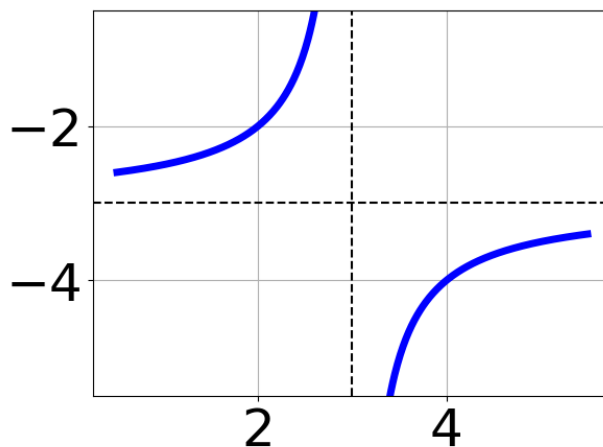
C.  $f(x) = \frac{-1}{(x-3)^2} + 7$

D.  $f(x) = \frac{1}{x+3} + 7$

E. None of the above

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5. Choose the equation of the function graphed below.



A.  $f(x) = \frac{-1}{(x-3)^2} - 3$

B.  $f(x) = \frac{1}{(x+3)^2} - 3$

C.  $f(x) = \frac{-1}{x-3} - 3$

D.  $f(x) = \frac{1}{x+3} - 3$

E. None of the above

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6. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{6}{-2x-3} + -5 = \frac{5}{-14x-21}$$

A.  $x \in [-1.03, 1.97]$

- B. All solutions lead to invalid or complex values in the equation.
  - C.  $x_1 \in [-2.03, 0.97]$  and  $x_2 \in [-0.03, 1.97]$
  - D.  $x \in [-2.03, -0.03]$
  - E.  $x_1 \in [-2.03, 0.97]$  and  $x_2 \in [-1.6, 0.4]$
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7. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{-2}{-8x + 2} + -2 = \frac{-9}{24x - 6}$$

- A.  $x \in [-2.44, 1.56]$
  - B.  $x_1 \in [-0.04, 0.14]$  and  $x_2 \in [0.56, 3.56]$
  - C.  $x \in [-0.04, 0.14]$
  - D. All solutions lead to invalid or complex values in the equation.
  - E.  $x_1 \in [-0.22, -0]$  and  $x_2 \in [0.56, 3.56]$
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8. Determine the domain of the function below.

$$f(x) = \frac{4}{12x^2 + 39x + 30}$$

- A. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-20.06, -19.04]$  and  $b \in [-18.48, -16.42]$
  - B. All Real numbers except  $x = a$ , where  $a \in [-2.49, -1.52]$
  - C. All Real numbers except  $x = a$ , where  $a \in [-20.06, -19.04]$
  - D. All Real numbers except  $x = a$  and  $x = b$ , where  $a \in [-2.49, -1.52]$  and  $b \in [-1.37, -1.17]$
  - E. All Real numbers.
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9. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{7x}{4x-3} + \frac{-7x^2}{-20x^2 + 39x - 18} = \frac{3}{-5x+6}$$

- A.  $x \in [1.08, 1.38]$
  - B. All solutions lead to invalid or complex values in the equation.
  - C.  $x_1 \in [-0.3, 0.02]$  and  $x_2 \in [0.37, 0.85]$
  - D.  $x_1 \in [-0.3, 0.02]$  and  $x_2 \in [0.81, 1.28]$
  - E.  $x \in [0.92, 1.12]$
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10. Solve the rational equation below. Then, choose the interval(s) that the solution(s) belongs to.

$$\frac{2x}{4x+6} + \frac{-6x^2}{24x^2 + 56x + 30} = \frac{-6}{6x+5}$$

- A.  $x \in [-1.37, 1.64]$
  - B. All solutions lead to invalid or complex values in the equation.
  - C.  $x \in [-2.74, -1.09]$
  - D.  $x_1 \in [-4.68, -3.43]$  and  $x_2 \in [-1.48, -1.33]$
  - E.  $x_1 \in [-4.68, -3.43]$  and  $x_2 \in [-1.54, -1.46]$
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